

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1.–23 (Cancelled)

24. (Previously Presented) A vertical cavity surface emitting laser (VCSEL) module, comprising:

a VCSEL;

a temperature sensor configured to sense an operating temperature of the VCSEL;

a heating element in thermal communication with the VCSEL; and

a control module in communication with the temperature sensor and operably connected with the heating element and with the VCSEL, and the control module configured to operate in:

a first operational mode where a change in operating temperature of the VCSEL is associated with a VCSEL operating current output of the control module; and

a second operational mode where a change in operating temperature of the VCSEL is associated with a heating element control output of the control module, the heating element control output corresponding with a thermal output of the heating element;

wherein a drop in VCSEL operating temperature below an activation temperature is associated with either:

a corresponding relative increase in the VCSEL operating current output of the control module; or

a corresponding change in a heating element control output of the control module; and

wherein the control module is configured to operate in whichever operational mode requires the least amount of energy, relative to the other operational mode.

25. **(Cancelled)**

26. **(Cancelled)**

27. **(Previously Presented)** A module as defined in claim 24, wherein at the predetermined operating temperature, a cavity resonance point of the vertical cavity surface emitting laser is substantially aligned with a gain bandwidth peak of the vertical cavity surface emitting laser.

28. **(Previously Presented)** A module as defined in claim 24, wherein the temperature sensor comprises a thermistor.

29. **(Previously Presented)** A module as defined in claim 24, wherein the heating element comprises a resistor.

30. **(Previously Presented)** A module as defined in claim 24, wherein the predetermined operating temperature is greater than 30 degrees Celsius.

31. **(Previously Presented)** A module as defined in claim 24, wherein the predetermined operating temperature is greater than about 50 degrees Celsius.

32. **(Previously Presented)** A module as defined in claim 24, wherein the predetermined operating temperature is about 70 degrees Celsius.

33. **(Previously Presented)** A module as defined in claim 24, wherein the control module turns the heating element off when the operating temperature exceeds the predetermined operating temperature.